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README.md

Microsoft Movie Analysis Project

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Overview

This project analyzes box office trends for Microsoft, who have decided to create a new movie studio. The goal was to explore what types of films have been excelling at the box office and to deliver our actionable insights to Microsoft's new movie studio executives. Our exploratory data analysis of the movie industry shows how genres and actors affect the popularity and rating of a movie. We have also explored the Return On Investments based on genres and when the movie was released within the film industry.

Repository Contents

- README.md - includes the summary of our Data Analysis and Presentation
- Data Folder - includes all datasets that we looked at, including the ones our analysis is based on
- Visualizations Folder - includes all visualizations we made, including preliminary rough ones.
- .gitignore - ignores large files
- Final_Notebook.ipynb - our final notebook which includes all the python code to be able to reproduce our data analysis
- Presentation Slides - our final presentation slides

Business Understanding

Microsoft wants to create a new movie studio, but they are unsure where to begin and need our data analysis expertise to help inform their business decisions. We have looked at movies that were the most popular at the box office, rated highly by the audience, and have had the highest ROI in the past ten years. By analyzing these data points, we are able to make recommendations about these attributes Microsoft's movies should make to be successful.

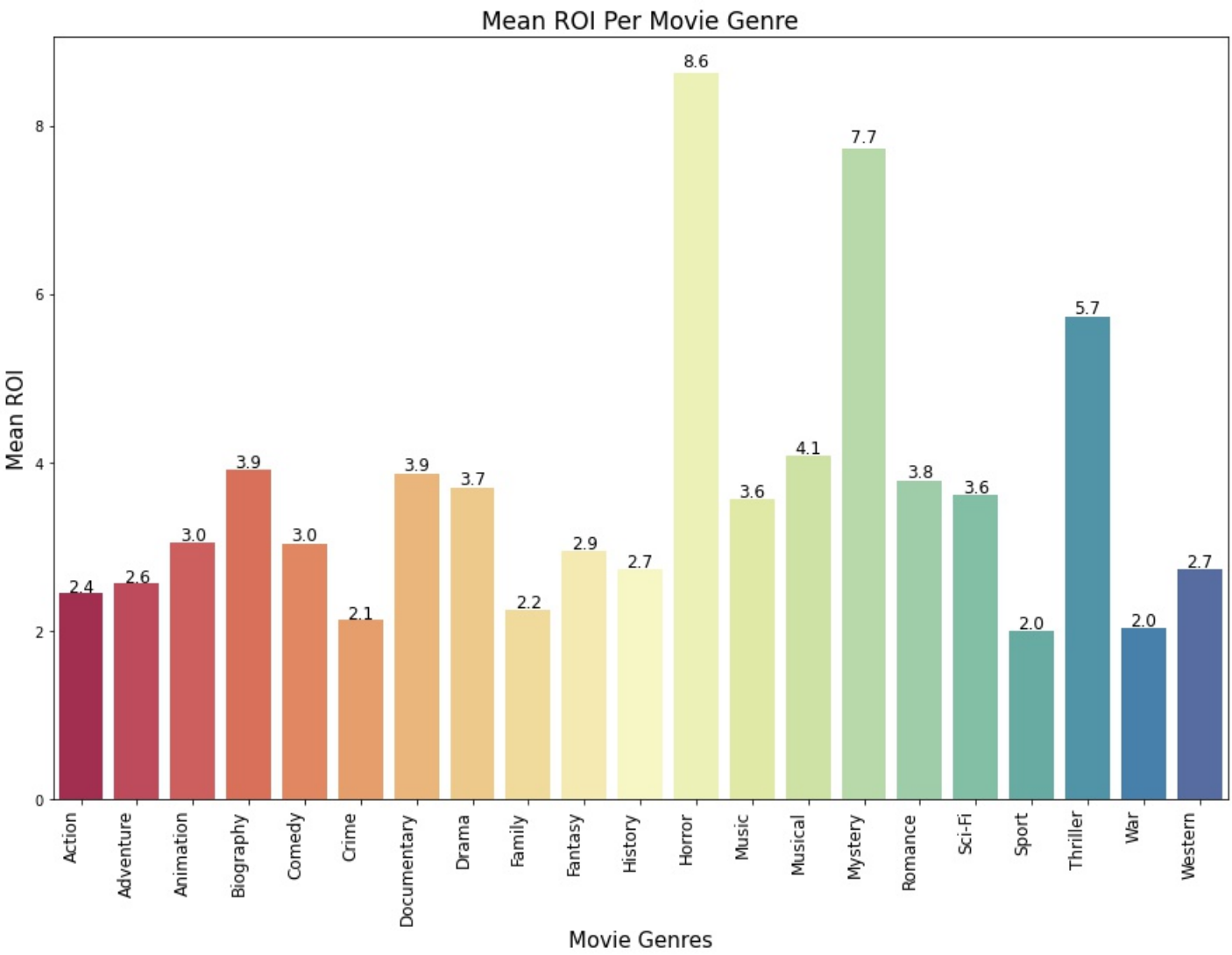
- Movie Type (Genre): What types of movies do audiences most want to watch?
- Movie Type (Genre): What movie genre has the highest ROI?
- Release Month: When is the best time of year to release a movie?
- Casting: What type of actors and actresses should be cast?

Data Understanding and Analysis

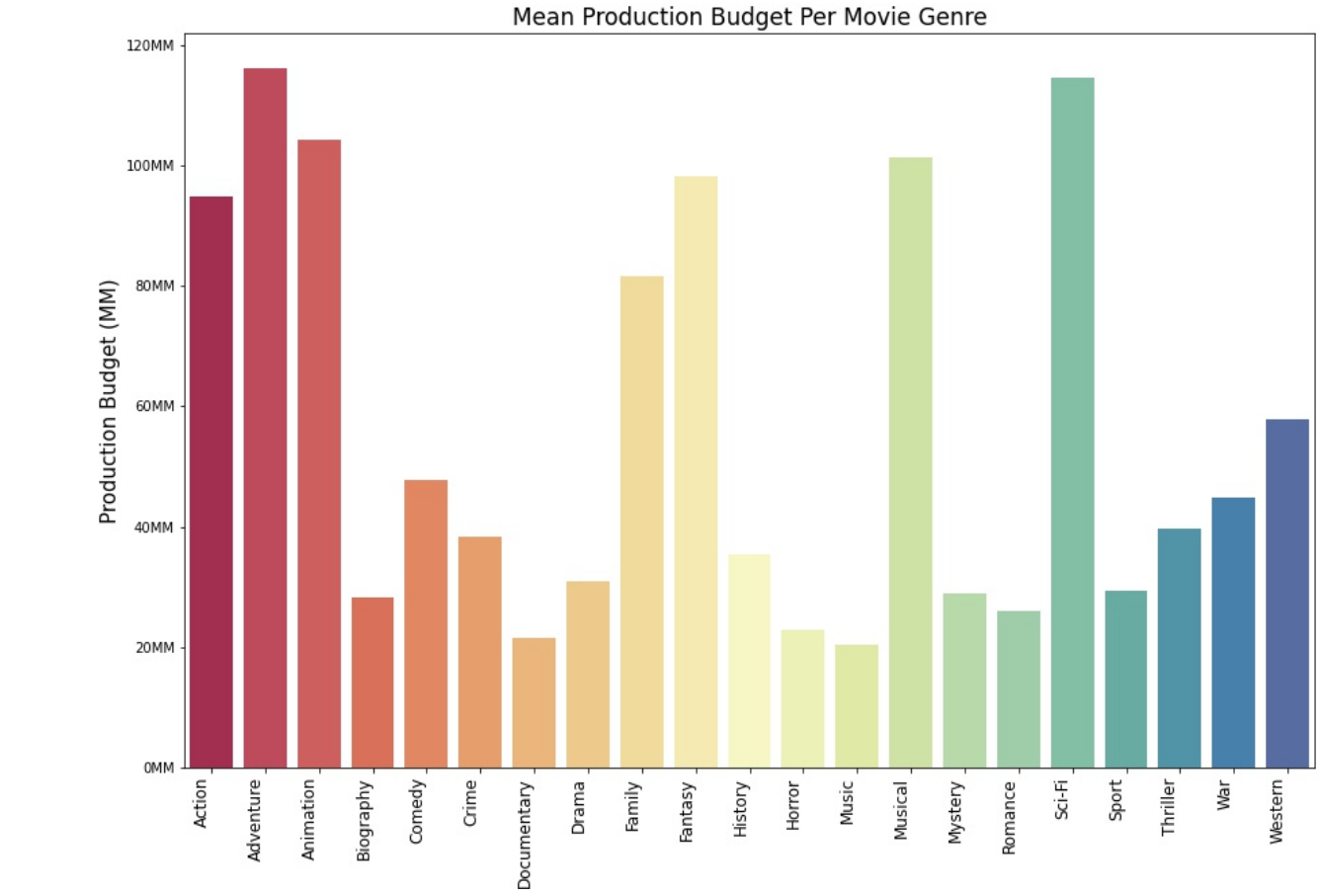
We utilized four different data sources for our analysis to obtain a better understanding of the movie industry and its ongoing trends. In these datasets, we can see the popularity of the movies, their rating with critics and the general public, and their ROI based on the production value and worldwide gross. Lastly, we saw the actors and actresses that were cast in the movies along with their average ratings.

- The Movie Database (TMDb)
- Internet Movie Database (IMDb)
- The Numbers
- Rotten Tomatoes

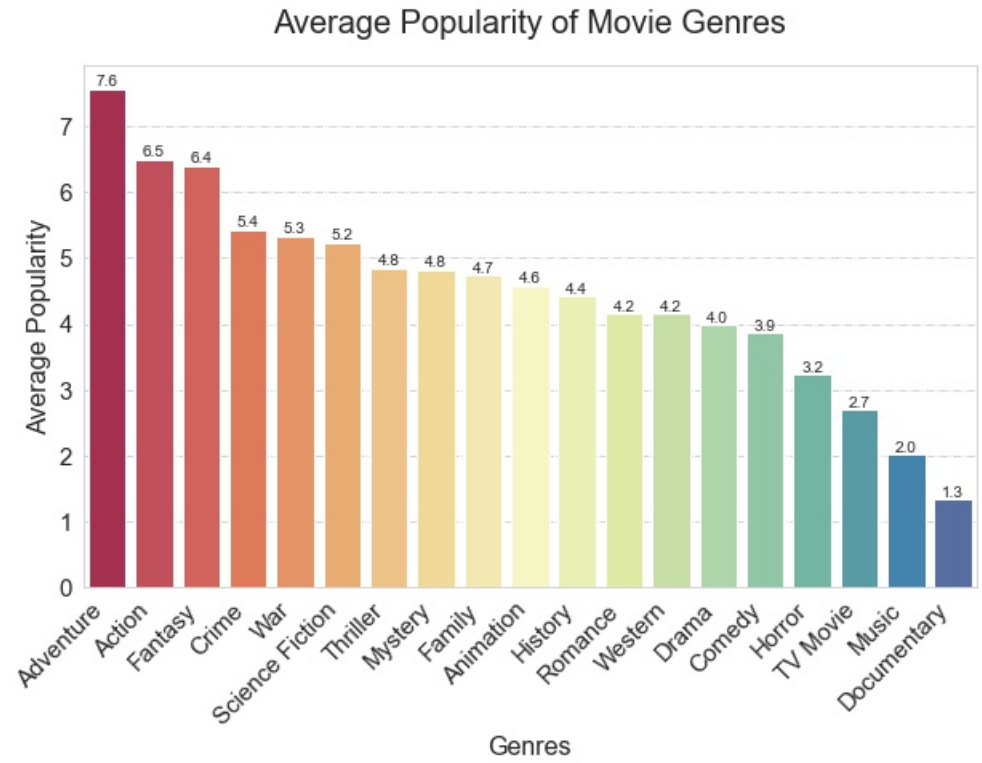
The movie genres with the highest return on investment were Horror, Mystery, and Thriller.



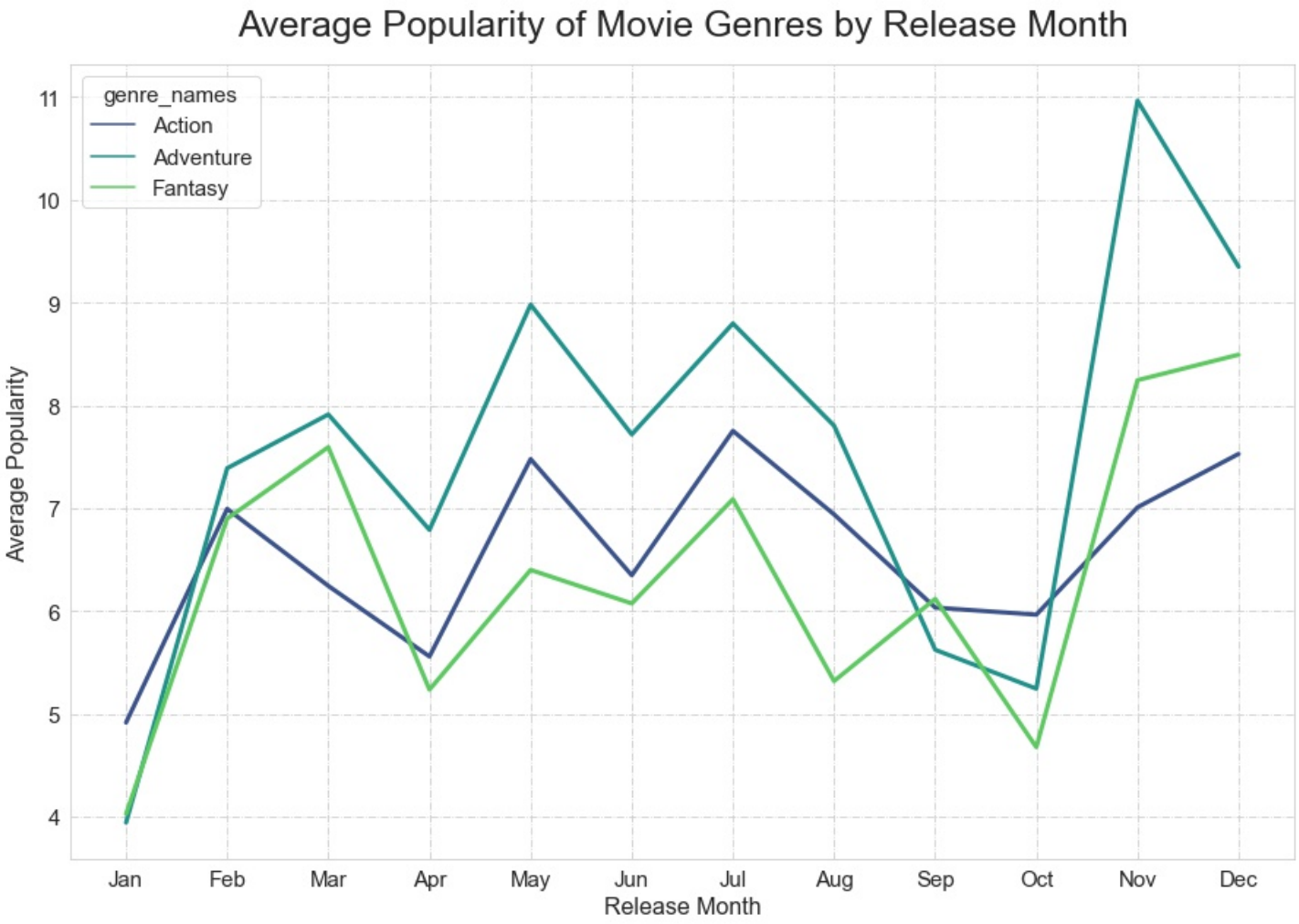
The movie genres with the lowest production budgets were Music, Documentary, and Horror.



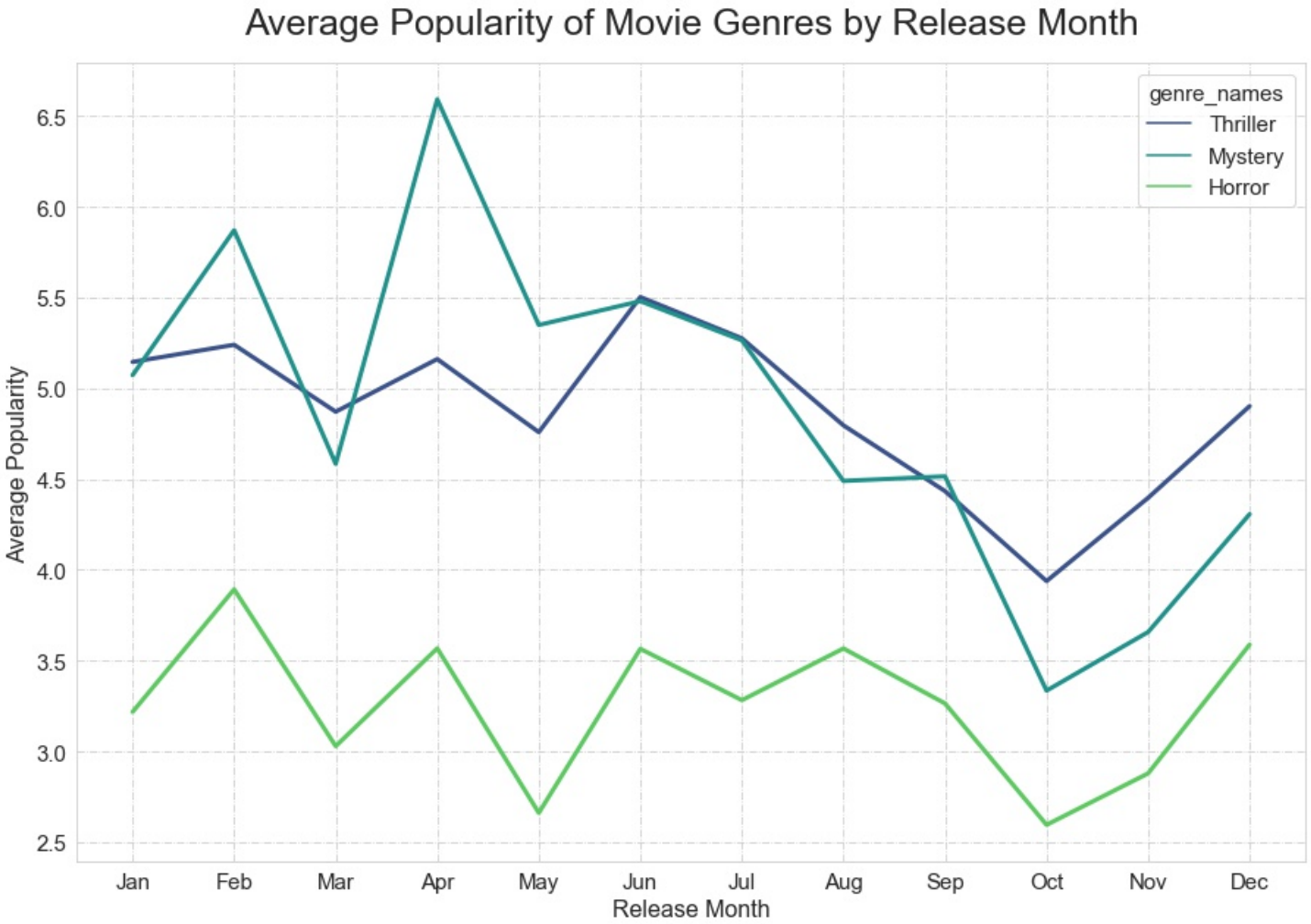
The most popular movie genres are Adventure, Action and Fantasy.



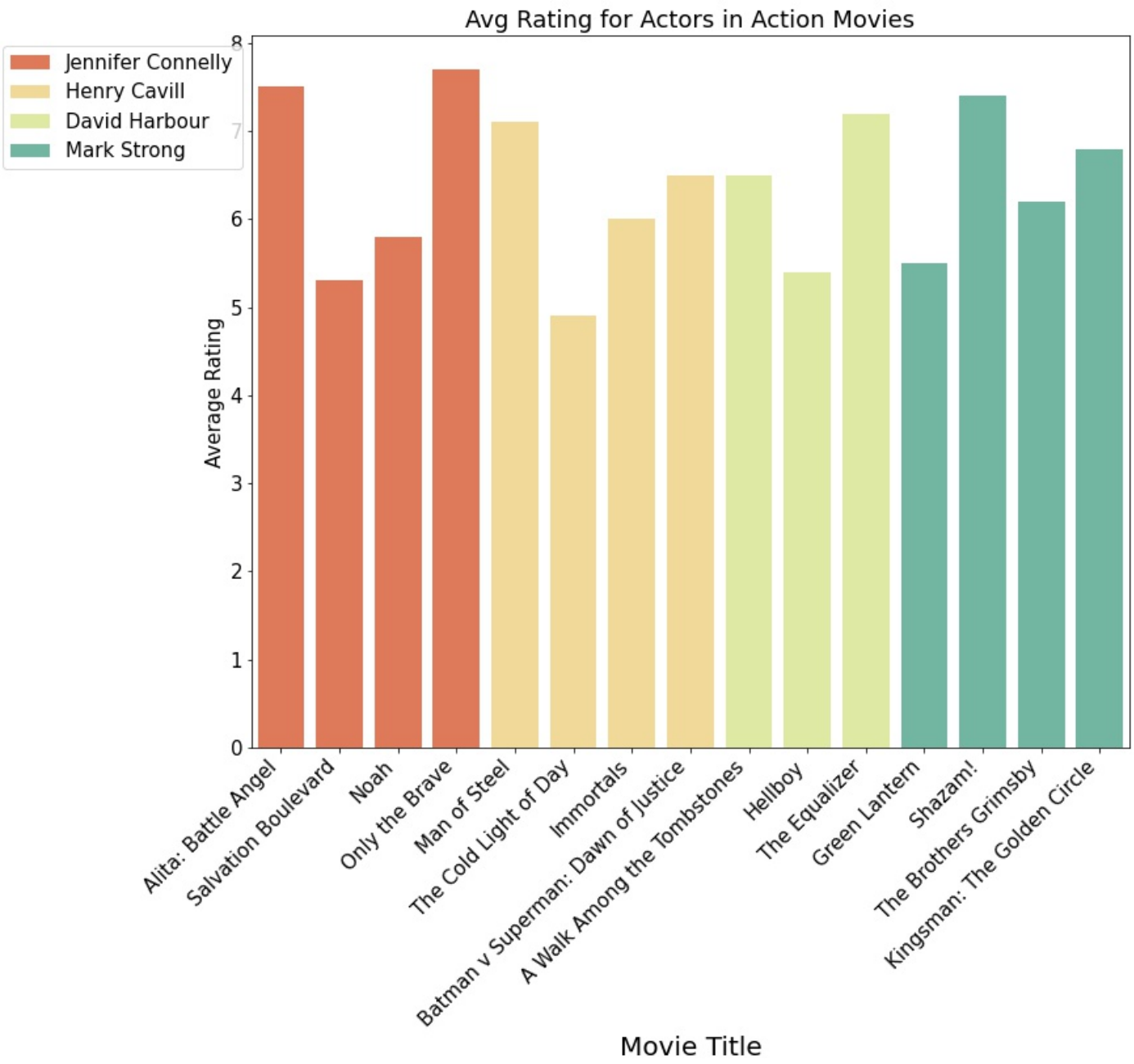
The most popular movies in the Adventure genre are released in November, Action genre are released in May and July and Fantasy genre are released in December.

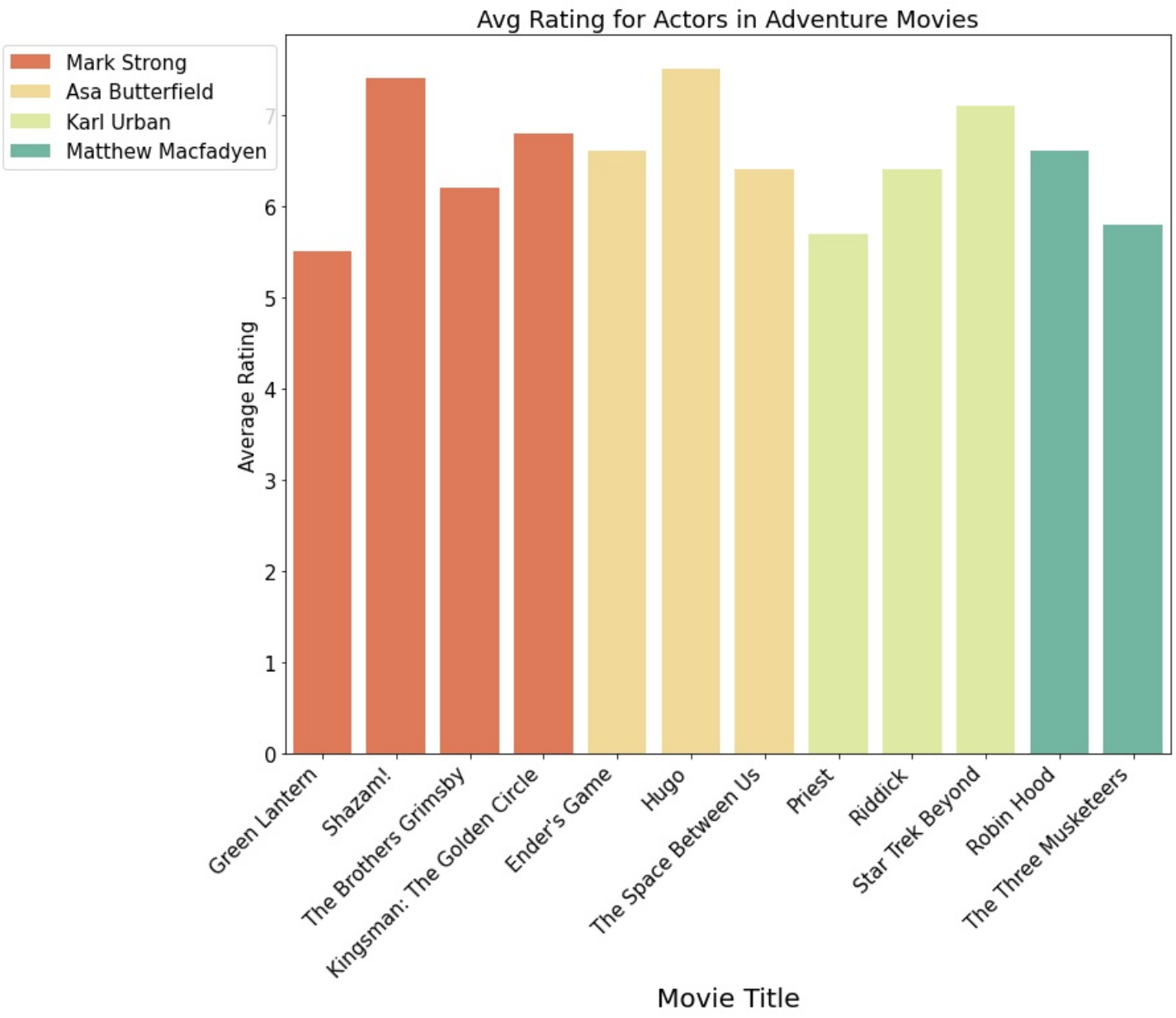

Average Popularity of Movie Genres by Release Month
genre_names
Action
Adventure
Fantasy
Average Popularity
11
10
9
8
7
6
5
4
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Release Month

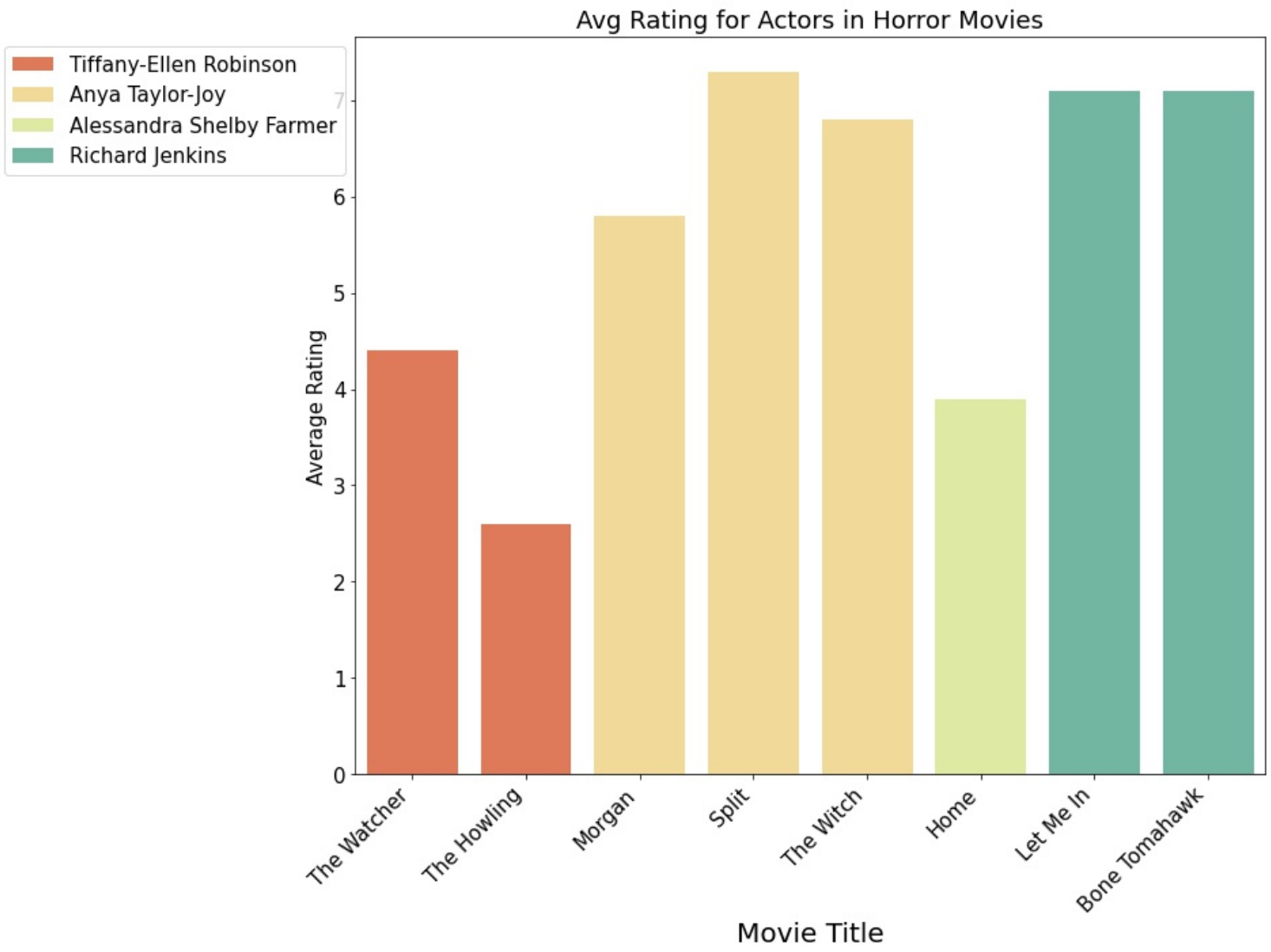
The movie with the highest ROI is Horror and should be released in February.



The best actors/actresses should be cast based on their consistant average rating between the popular genres.


Avg Rating for Actors in Action Movies
Jennifer Connelly
Henry Cavill
David Harbour
Mark Strong
Average Rating
0
1
2
3
4
5
6
7
8
Alita: Battle Angel
Salvation Boulevard
Noah
Only the Brave
Man of Steel
The Cold Light of Day
Immortals
Batman v Superman: Dawn of Justice
A Walk Among the Tombstones
Hellboy
The Equalizer
Green Lantern
Shazam!
The Brothers Grimsby
Kingsman: The Golden Circle
Movie Title


Avg Rating for Actors in Adventure Movies
Mark Strong
Asa Butterfield
Karl Urban
Matthew Macfadyen
Average Rating
0
1
2
3
4
5
6
7
Green Lantern
Shazam!
The Brothers Grimsby
Kingsman: The Golden Circle
Ender's Game
Hugo
The Space Between Us
Priest
Riddick
Star Trek Beyond
Robin Hood
The Three Musketeers
Movie Title



Conclusion

To conclude, we recommended either a low risk approach with horror movies or a high risk approach with action/adventure films.

- Low Risk - The benefit of the low risk approach is the high ROI and low cost of production although Horror is considered less popular with consumers. If Microsoft decided to move forward with this approach, we recommend for the movie to be released in February featuring popular horror actress Anya Taylor-Joy.
- High Risk - Going with an Action/Adventure film is beneficial because it is the most popular genre amongst consumers and normally has a high
  budget for advertisement which is likely to draw in a larger audience but needs to earn a significant amount to maintain a reasonable ROI. Based on this recommendation, if Microsoft wishes to proceed with this route, we suggest the movie to be released in November featuring popular action/adventure actor Mark Strong.

Further Analysis

Potential opportunitues for further analysis:

- Obtain a database with more actors/actresses and their ratings across various castings.
- Look into the profitability of an actor/actress and how well they perform based on the director or writer they are working with.
- View ROI based on a director and their works.
- See how the ratings and popularity scales differ between different reviewing platforms and how it influences the average viewer and their likelihood to view the movie.

- Compare the ROI difference between domestic gross and worldwide gross. How some types of movies perform better in some countries compared to others.
- Discuss who the studio's main target audience is and perform a data analysis based on those traits.

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Languages

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